

TABLE OF NORTH AMERICAN KERMES, BASED ON EXTERNAL CHARACTERS.

BY T. D. A. COCKERELL, MESILLA PARK, N. MEX.

- Not entirely covered with wax, nor pubescent, nor covered with a white powder . . . . . 1
- Covered all over with dull white wax. (Arizona) . . . *ceriferus* Ehrhorn.
- Covered with snow-white powder, except on the middle of the back. (Mass.) . . . . . *nivalis* King & Ckll.
- Small, thinly pubescent. (Kans., Mass.) . . . . . *pubescens* Bogue.
1. Convex, without a median longitudinal constriction . . . . . 2
- With a more or less distinct median longitudinal constriction . . . . . 6
2. Large, with transverse sulci, the segments more or less gibbous, with three gibbosities (one median) in each transverse series. (Colo., N. M.)  
    *gillettei* Ckll.
- Segments not at all gibbous . . . . . 3
3. Very large (10 mm. diam.), rather rough, marbled with brown and dull white, the white with brown specks. (Mexico.) . . . *grandis* Ckll.
- Not so large, species of the U. S. . . . . 4
4. Extremely convex, red brown with distinct dark ferruginous transverse bands. (Mass.) . . . . . *andrei* King.
- Orange-brown, marbled with dull white, the white with fulvous points; younger individuals with a broken waxy coating. (Calif.) *austini* Ehrh.
- Larger than *austini*, nearly globular, marbled with white, black and reddish, or black and reddish, covered with waxy secretion, which is divided into small portions separated by smooth (wax-free) lines; the minute points on the white are intensely black. (Okla.) . . . . . *boguei* Ckll.
- Pale ochreous, or reddish, with small black spots, and minute black points, usually distinctly variegated with irregular pale bands . . . . . 5
5. Broader than long, the pale bands running in a transverse direction, parallel with the rows of black spots. (Bluffton, S. C., etc.) *galliformis* Riley.
- Longer than broad, the pale bands running longitudinally, at right angles to the rows of spots. (Mass., Del.) . . . . . *kingii* Ckll.
6. Segmentation distinct, segments very strongly gibbous. (Calif.)  
    *cockerelli* Ehrh.
- Segmentation distinct, but segments not gibbous; surface not speckled with black. (Kansas.) . . . . . *concinulus* Ckll.
- Segmentation not distinct, nor the segments gibbous; surface speckled with black or dark dots . . . . . 7

7. Black spots conspicuous, arranged in transverse rows; black specks not always conspicuous. (N. Y., Mass.; also collected by Fletcher in Canada, on *Quercus rubra*.) . . . . . *pettiti* Ehrh.  
Black spots minute, not definitely arranged in transverse rows; black specks very distinct; ground color pale ochreous. (Calif., Mexico.)

*nigropunctatus* Ehlh. & Ckll.

I have taken as typical of *galliformis* a specimen from the Riley collection, collected by J. H. Mellichamp at Bluffton, S. C. Riley's description shows that he also included *K. pettiti* under the same name. Mr. G. B. King has collected *pettiti* in Massachusetts

## THE SPECIES OF THE OEDIPODINE GENUS HELIASTUS SAUSS., OCCURRING IN THE UNITED STATES.

BY SAMUEL H. SCUDDER, CAMBRIDGE, MASS.

*Heliaustus* was founded by Saussure in 1884 on some Mexican and Central American Oedipodinae. It was first recognized as occurring in the United States three years ago, when I referred to it two insects which had been described as species of *Thrinacus*. Both of these species also occur in Mexico, but were unknown to Saussure. I can now add another and undescribed species, known to me from only a single locality in California, and collected by Mr. A. P. Morse. All these northern species belong to Saussure's second division of the group in which the lower posterior angle of the lateral lobes is not produced into a distinct process. They are all of a light gray color, more or less irregularly spotted with brown, sometimes forming brief transverse markings when the insect is alighted; the wings are glazed, often iridescent, and generally, at least in part, weakly tinted. The males are

considerably smaller than the females. The species may be separated as follows:—

### *Table of our species of Heliaustus.*

*a*<sup>1</sup>. Of large size. Antennae at least two thirds as long as hind femora; posterior process of metazona weakly obtusangulate, often almost rectangular; descending lobes of pronotum apically well rounded, falling distinctly below the level of the pleural lobe anterior to them.

*b*<sup>1</sup>. Larger. Descending lobes of pronotum angulato-rotundate below; wings hyalino-citron basally, weakly infuscated apically . . . . . *aridus*.

*b*<sup>2</sup>. Smaller. Descending lobes of pronotum regularly rotundate below; wings pellucid, or faintly violaceous, only the veins fuscous.

*californicus*.

*a*<sup>2</sup>. Of small size. Antennae only half as long as hind femora; posterior pro-